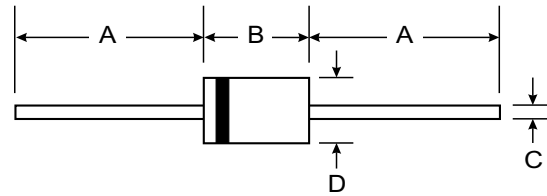


Features

- 1.3 W Power Dissipation
- Reliable Glass Package
- Planar Die Construction
- 0.7V - 100V Nominal Zener Voltages
Plus ZPY1 Stabistor

Mechanical Data

- Case: Glass, DO-41
- Leads: Solderable per MIL-STD-202,
Method 208
- Polarity: Cathode Band
- Marking: Type Number
- Weight: 0.35 grams (approx.)



DO-41		
Dim	Min	Max
A	25.4	—
B	4.1	5.2
C	0.71	0.86
D	2.0	2.7
All Dimensions in mm		

Maximum Ratings 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Zener Current (see Table on Page 2)	—	—	—
Power Dissipation (Note 1)	P_d	1.3	W
Thermal Resistance, Junction to Ambient Air (Note 1)	$R_{\theta JA}$	135	K/W
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +200	°C

Note: 1. Valid provided that leads are kept at ambient temperature at a distance of 10mm from case.

Electrical Characteristics 25°C unless otherwise specified

Type Number	Zener Voltage Range (Note 2)	Test Current	Maximum Zener Impedance	Typical Temperature Coefficient	Minimum Reverse Voltage @ $I_R = 0.5\mu A$	Maximum Zener Current (Note 1)
	$V_Z @ I_{ZT}$	I_{ZT}	$Z_{ZT} @ I_{ZT}$	@ TC	V_R	I_{ZM}
	Volts	mA	Ohms	%/°C	Volts	mA
ZPY1 (Note 3)	0.65-0.75	5.0	8	-0.24	—	580
ZPY3.9	3.7-4.1	100	7	-0.025	—	290
ZPY4.3	4.0-4.6	100	7	-0.020	—	260
ZPY4.7	4.4-5.0	100	7	-0.015	—	235
ZPY5.1	4.8-5.4	100	5	-0.005	0.7	215
ZPY5.6	5.2-6.0	100	2	+0.010	1.5	193
ZPY6.2	5.8-6.6	100	2	+0.025	2	183
ZPY6.8	6.4-7.2	100	2	+0.035	3	157
ZPY7.5	7.0-7.9	100	2	+0.035	5	143
ZPY8.2	7.7-8.7	100	2	+0.055	6	127
ZPY9.1	8.5-9.6	50	4	+0.055	7	117
ZPY10	9.4-10.6	50	4	+0.070	7.5	105
ZPY11	10.4-11.6	50	7	+0.075	8.5	94
ZPY12	11.4-12.7	50	7	+0.075	9.0	85
ZPY13	12.4-14.1	50	9	+0.075	10	78
ZPY15	13.8-15.8	50	9	+0.075	11	70
ZPY16	15.3-17.1	25	10	+0.090	12	63
ZPY18	16.8-19.1	25	11	+0.090	14	57
ZPY20	18.8-21.2	25	12	+0.090	15	52
ZPY22	20.8-23.3	25	13	+0.090	17	48
ZPY24	22.8-25.6	25	14	+0.095	18	42
ZPY27	25.1-28.9	25	15	+0.095	20	38
ZPY30	28-32	25	20	+0.095	22.5	35
ZPY33	31-35	25	20	+0.095	25	31
ZPY36	34-38	10	60	+0.095	27	29
ZPY39	37-41	10	60	+0.100	29	26
ZPY43	40-46	10	80	+0.105	32	24
ZPY47	44-50	10	80	+0.105	35	22
ZPY51	48-54	10	100	+0.105	38	20
ZPY56	52-60	10	100	+0.105	42	18
ZPY62	58-66	10	130	+0.105	47	16
ZPY68	64-72	10	130	+0.105	51	14
ZPY75	70-79	10	160	+0.105	56	13
ZPY82	77-88	10	160	+0.105	61	12
ZPY91	85-96	5.0	250	+0.110	68	11
ZPY100	94-106	5.0	250	+0.110	75	10

- Notes:
1. Valid provided that leads are kept at ambient temperature at a distance of 10mm from case.
 2. Tested with pulses $t_p = 20\text{ms}$.
 3. The ZPY1 is a silicon diode operated in forward direction. Hence, the index of all parameters and maximum ratings should be "F" instead of "Z." Connect the cathode terminal to the negative pole.

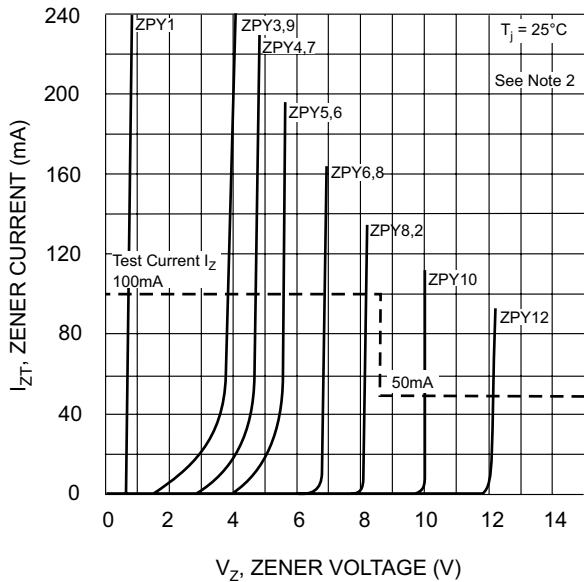


Fig. 1, Zener Breakdown Characteristics

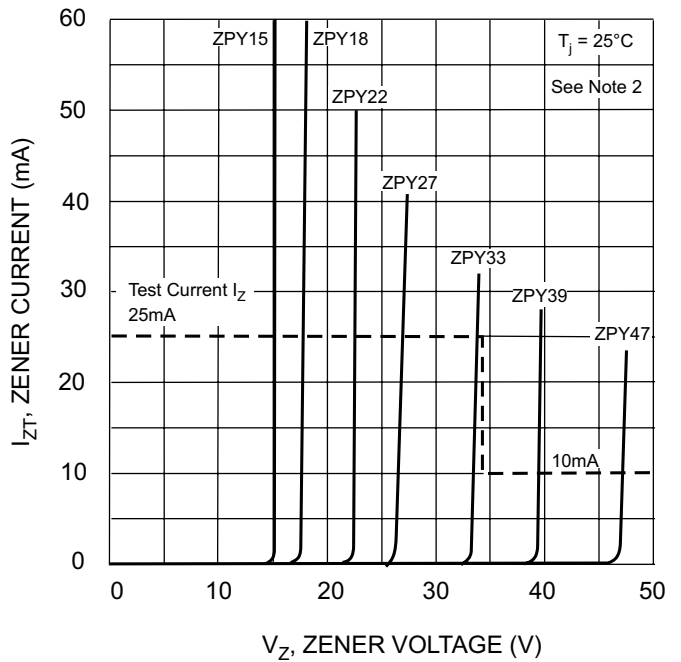


Fig. 2, Zener Breakdown Characteristics

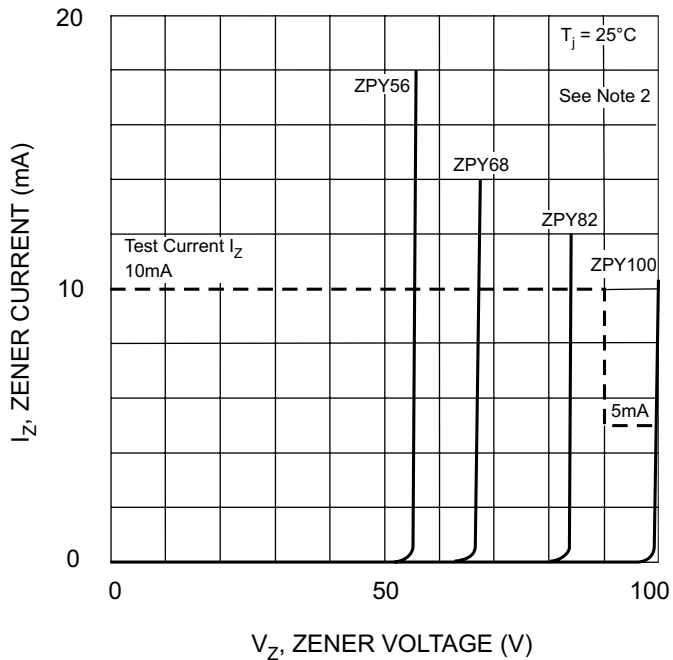


Fig. 3, Zener Breakdown Characteristics

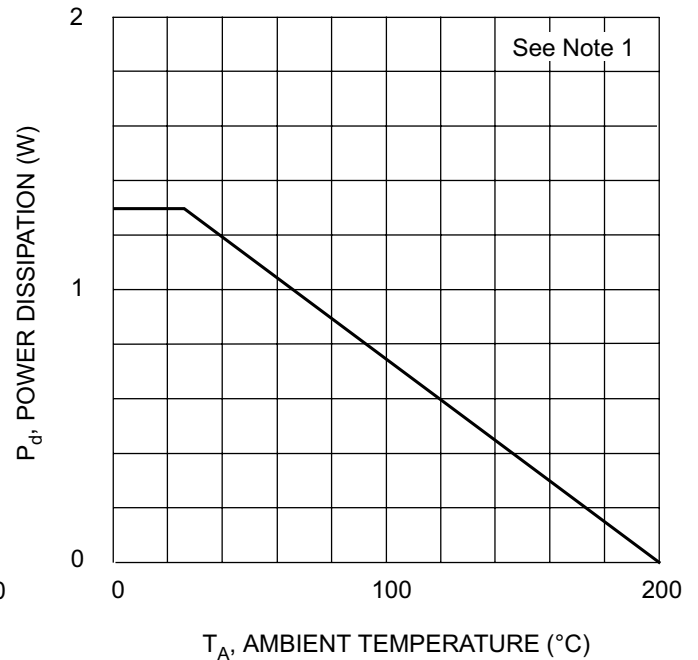


Fig. 4, Power Derating Curve

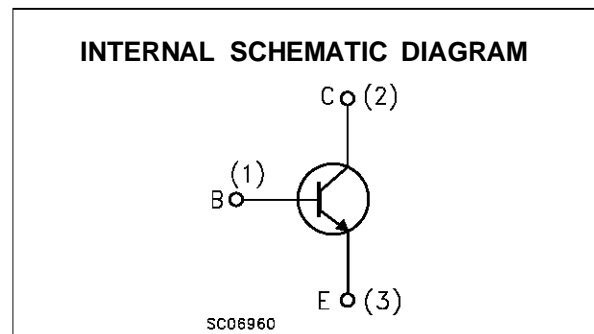
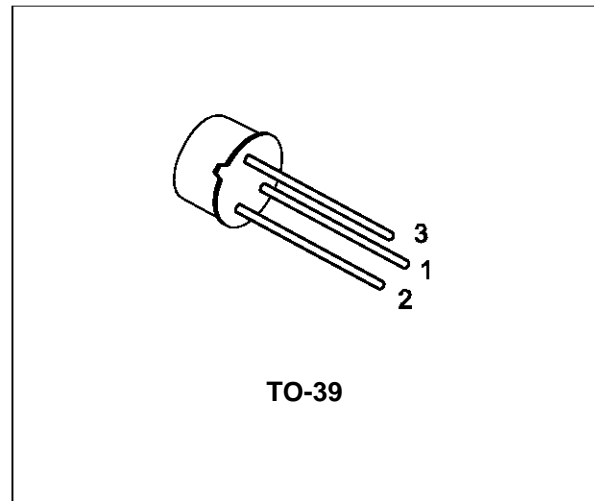
- Notes:
1. Valid provided that leads are kept at ambient temperature at a distance of 10mm from case.
 2. Tested with pulses $t_p = 20\mu s$.
 3. The ZPY1 is a silicon diode operated in forward direction. Hence, the index of all parameters and maximum ratings should be "F" instead of "Z." Connect the cathode terminal to the negative pole.

GENERAL PURPOSE TRANSISTORS

DESCRIPTION

The BC141 is a silicon planar epitaxial NPN transistors in Jedec TO-39 metal case. They are particularly designed for audio amplifiers and switching application up to 1A.

The complementary PNP type is the BC161.


ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	100	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	60	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	7	V
I_C	Collector Current	1	A
I_B	Base Current	0.1	A
P_{tot}	Total Dissipation at $T_{amb} \leq 45\text{ }^\circ\text{C}$ at $T_{case} \leq 45\text{ }^\circ\text{C}$	0.65	W
		3.7	W
T_{stg}	Storage Temperature	-55 to 175	$^\circ\text{C}$
T_j	Max. Operating Junction Temperature	175	$^\circ\text{C}$

BC141

THERMAL DATA

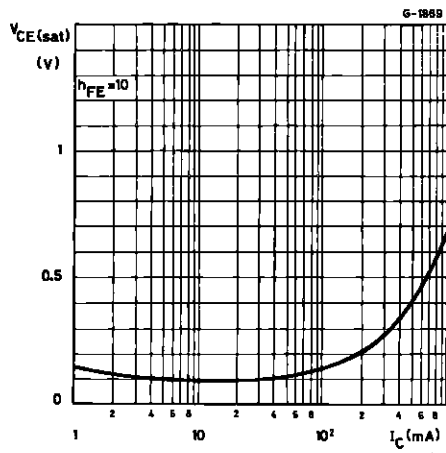
$R_{thj-case}$	Thermal Resistance Junction-Case	Max	35	$^{\circ}C/W$
$R_{thj-amb}$	Thermal Resistance Junction-Ambient	Max	200	$^{\circ}C/W$

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

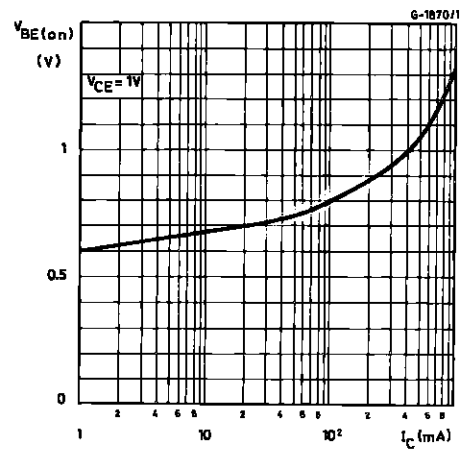
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cut-off Current ($V_{BE} = 0$)	$V_{CE} = 60 V$ $V_{CE} = 60 V \quad T_{amb} = 150^{\circ}C$			100 100	nA μA
$V_{(BR)CBO}^*$	Collector-Base Breakdown Voltage ($I_E = 0$)	$I_C = 100 \mu A$	100			V
$V_{(BR)CEO}^*$	Collector-Emitter Breakdown Voltage ($I_B = 0$)	$I_C = 30 mA$	60			V
$V_{(BR)EBO}^*$	Emitter-Base Breakdown Voltage ($I_C = 0$)	$I_E = 100 \mu A$	7			V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 100 mA \quad I_B = 10 mA$ $I_C = 500 mA \quad I_B = 50 mA$ $I_C = 1 A \quad I_B = 100 mA$		0.1 0.35 0.6	1	V V V
$V_{BE(on)}^*$	Base-Emitter On Voltage	$I_C = 1 A \quad V_{CE} = 1 V$		1.25	1.8	V
h_{FE}^*	DC Current Gain	$I_C = 100 \mu A \quad V_{CE} = 1 V$ for BC141 for BC141 Gr. 6 for BC141 Gr. 10 for BC141 Gr. 16 $I_C = 100 mA \quad V_{CE} = 1 V$ for BC141 for BC141 Gr. 6 for BC141 Gr. 10 for BC141 Gr. 16 $I_C = 1 A \quad V_{CE} = 1 V$ for BC141 for BC141 Gr. 6 for BC141 Gr. 10 for BC141 Gr. 16		75 28 40 90 40 40 63 100 100 26 15 20 30	250 100 160 250	
f_T	Transition Frequency	$I_C = 50 mA \quad V_{CE} = 10 V$	50			MHz
C_{CBO}	Collector Base Capacitance	$I_E = 0 \quad V_{CB} = 5 V \quad f = 1 MHz$		12	25	pF
t_{on}	Turn-on Time	$I_C = 100 mA \quad I_{B1} = 5 mA$			250	ns
t_{off}	Turn-off Time	$I_C = 100 mA \quad I_{B1} = I_{B2} = 5 mA$			850	ns

* Pulsed: Pulse duration = 300 μs , duty cycle $\leq 1\%$

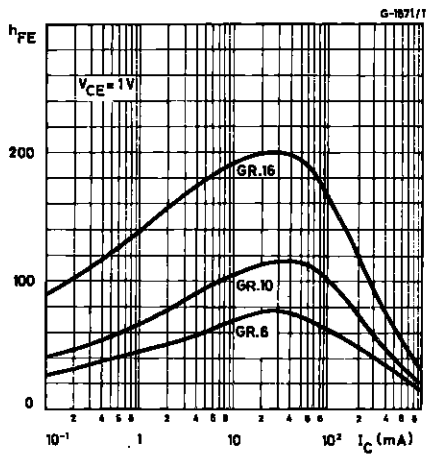
Collector-emitter Saturation Voltage.



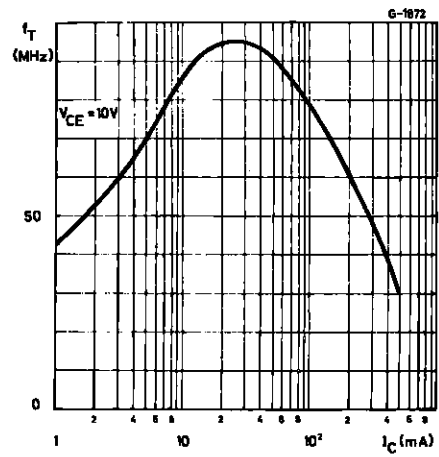
Base-emitter Voltage.



DC Current Gain.



Transition Frequency.



COMPLEMENTARY SILICON POWER TRANSISTORS

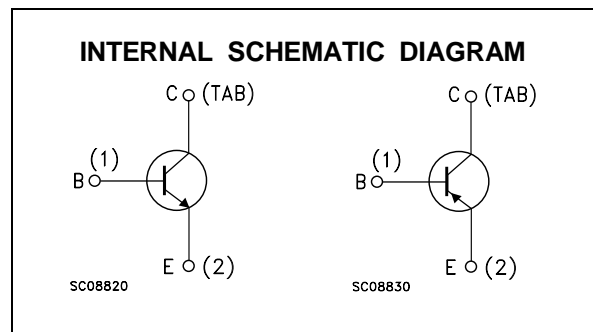
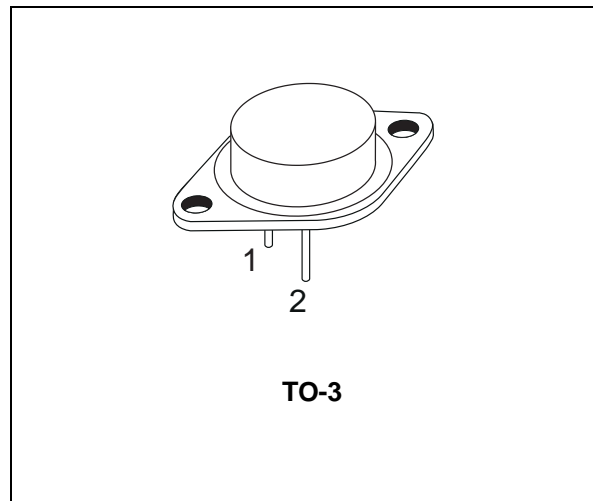
- STMicroelectronics PREFERRED SALESTYPES
- COMPLEMENTARY NPN-PNP DEVICES

DESCRIPTION

The 2N3055 is a silicon Epitaxial-Base Planar NPN transistor mounted in Jedec TO-3 metal case.

It is intended for power switching circuits, series and shunt regulators, output stages and high fidelity amplifiers.

The complementary PNP type is MJ2955.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		NPN	2N3055	
		PNP	MJ2955	
V_{CBO}	Collector-Base Voltage ($I_E = 0$)		100	V
V_{CER}	Collector-Emitter Voltage ($R_{BE} \leq 100\Omega$)		70	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)		60	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)		7	V
I_C	Collector Current		15	A
I_B	Base Current		7	A
P_{tot}	Total Dissipation at $T_c \leq 25^\circ\text{C}$		115	W
T_{stg}	Storage Temperature		-65 to 200	$^\circ\text{C}$
T_j	Max. Operating Junction Temperature		200	$^\circ\text{C}$

For PNP types voltage and current values are negative.

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	1.5	°C/W
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ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CEX}	Collector Cut-off Current (V _{BE} = -1.5V)	V _{CE} = 100 V V _{CE} = 100 V T _j = 150 °C			1 5	mA mA
I _{CEO}	Collector Cut-off Current (I _B = 0)	V _{CE} = 30 V			0.7	mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 7 V			5	mA
V _{CEO(sus)*}	Collector-Emitter Sustaining Voltage (I _B = 0)	I _C = 200 mA	60			V
V _{CER(sus)*}	Collector-Emitter Sustaining Voltage (R _{BE} = 100 Ω)	I _C = 200 mA	70			V
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	I _C = 4 A I _B = 400 mA I _C = 10 A I _B = 3.3 A			1 3	V V
V _{BE*}	Base-Emitter Voltage	I _C = 4 A V _{CE} = 4 A			1.8	V
h _{FE*}	DC Current Gain	I _C = 4 A V _{CE} = 4 A I _C = 10 A V _{CE} = 4 A	20 5		70	
f _T	Transition frequency	I _C = 0.5 A V _{CE} = 10 V	3			MHz
I _{s/b*}	Second Breakdown Collector Current	V _{CE} = 40 V	2.87			A

* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %
For PNP types voltage and current values are negative.